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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/888,606

06/26/2001

Kazuyuki Shigeta

35.C15480

8670

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7590

09/29/2005

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/888,606	Applicant(s) SHIGETA, KAZUYUKI	
	Examiner Jennifer T. Nguyen	Art Unit 2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE 7/19/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

24

DETAILED ACTION

1. This Office action is responsive to request for continued examination filed on 7/19/2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 10, 11, 13, 14, 20, 22-24, 29, 31, 33-38, 40, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. Patent No. 5,734,436) in view of Kawamura et al. (Patent No. US 6,535,688).

Regarding claims 1, 5-7, 20, 22, 23, 33, 35, and 36, referring to Figs. 2A, 2B, 5, and 13A-13D, Abe teaches an image display apparatus (131) comprising an image signal generating unit (not shown) for generating an image signal (i.e., video signal input 21) (Fig. 4) and an image display element (i.e., TV display) for displaying an image on a screen according to the image signal inputted from the image signal generating unit,

wherein when the screen is divided into a portion (i.e., main section) (Fig. 13A) in which the image is displayed and a dark display portion (i.e., blank zone) in which no image is displayed (from col. 8, line 59 to col. 9, line 65), non-dark display (i.e., teletext) (Figs. 13B-13D) is performed in the dark display portion for a predetermined time period (i.e., the character data are transmitted in the 14th H through 16th H and 21th H of vertical blanking period) from a start time of display control until a start time of a process for terminating the display control, and the

Art Unit: 2674

predetermined time period is set such that the non-dark display is performed for the predetermined time period (Fig. 2A, col. 6, lines 25-33).

Abe differs from claims 1, 5-7, 20, 22, 23, 33, 35, and 36 in that he does not specifically teach even the non-dark display is performed for the predetermined time period, the non-dark display cannot be recognized by a viewer. However, Kawamura teaches a reversal of the display state for a short time period performed at a frequency of 59.9 Hz, wherein the display state at this frame rate is cannot be recognized by the viewer (Fig. 41, col. 12, lines 20-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the reversal of the display state as taught by Kawamura in the system of Abe in order to the flicker is rarely recognized and avoid annoying users.

Regarding claim 2, Abe further teaches the image display element includes a plurality of modulation target units that are two-dimensionally arranged (col. 7, lines 37-42).

Regarding claim 3, Abe further teaches the image display element performs binary display (from col. 6, line 19 to col. 7, line 3).

Regarding claim 4, the combination of Abe and Kawamura teaches the non-dark display is an image reversal (col. 12, lines 20-30).

Regarding claims 8, 40, and 41, Abe further teaches the image is displayed by sequentially irradiating the image display element with light in various colors and switching images in the colors displayed by the image display element in synchronization with the light irradiation, and the non-dark display is performed in a display period assigned to a specific color (col. 7, lines 19-25 and from col. 10, line 47 to col. 11, line 13).

Regarding claims 10, 11, 37, and 38, the combination of Abe and Kawamura teaches the non-dark display is cyclically performed at a frequency of 59.9 Hz (Fig. 41, col. 12, lines 20-30 of Kawamura).

Regarding claims 13, 14, 29, and 31, Abe further teaches a difference in aspect ratio between the image to be displayed (4:3) and the screen (16:9) causes the division of the screen into the portion in which the image is displayed and the portion in which no image is displayed (Fig. 13) (col. 8, lines 59-67).

Regarding claims 24 and 34, Abe differs from claims 24 and 34 in that he does not specifically teach a total effective time of the bright display accounts for a proportion exceeding 0% but not exceeding 20% of an entire display period. Abe teaches time of the bright display accounts for a proportion is determined by the blank zone location regulating section (302) (Fig. 14) (col. 11, lines 1-65). However, it would have been obvious to obtain the proportion exceeding 0% but not exceeding 20% of an entire display period in order to avoid annoying users.

4. Claims 12, 15-17, 21, 25, 26, 30, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (US Patent No. 5,734,436) in view of Kawamura et al. (Patent No. US 6,535,688)

and Applicant Admitted Prior Art (AAPA) Fig. 9.

Regarding claims 12, 30, and 39, the combination of Abe and Kawamura differs from claims 12, 30, and 39 in that he does not specifically teach the image signal transmitted from said image signal generating unit to said image display element is a pulse-width-modulated signal, and the image display element is driven by the pulse-width-modulated signal and

Art Unit: 2674

displays a gradation image. AAPA discloses the image signal transmitted from said image signal generating unit (7) to said image display element is a pulse-width-modulated signal, and the image display element (2) is driven by the pulse-width-modulated signal and displays a gradation image (from the PWM conversion unit 85) [supporting specification 0023].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the pulse-width-modulated signal as taught by AAPA in the system of the combination of Abe and Kawamura in order to simplify the optical system and electric circuit system and therefore is suitable for realizing a lightweight display unit.

Regarding claims 15, 17, and 26, the combination of Abe, Kawamura and AAPA teaches the image display element is a spatial modulation element that uses a liquid crystal [supporting specification 0010].

Regarding claims 16, 21, and 25, the combination of Abe, Kawamura and AAPA teaches the image display element is a spatial modulation element of an MEMS type [supporting specification 0012].

5. Claims 9 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. Patent No. 5,734,436) in view of Kawamura et al. (Patent No. US 6,535,688) and Nakai et al. (U.S. Patent No. 5,990,971).

Regarding claims 9 and 32, the combination of Abe and Kawamura teaches the image display element performs binary display (from col. 6, line 19 to col. 7, line 3 of Abe).

Regarding claims 9 and 32, the combination of Abe and Kawamura differs from claims 9 and 32 in that it does not specifically teach the non-dark display is performed for a signal corresponding to a low gradation. However, referring to Figs. 5a-5c, Nakai teaches the non-dark

Art Unit: 2674

display is performed for a signal corresponding to a low gradation (col. 6, lines 14-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the non-dark display is performed for a signal corresponding to a low gradation as taught by Nakai in the system of the combination of Abe and Kawamura in order to avoid annoying users.

6. Claims 18, 19, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. Patent No. 5,734,436) in view of Kawamura et al. (Patent No. US 6,535,688) and Shen et al. (U.S. Patent No. 6,486,900).

Regarding claims 18, 19, 27, and 28, the combination of Abe and Kawamura differs from claims 18, 19, 27, and 28 in that it does not specifically teach the image display element is an LED. However, Shen teaches the image display element is an LED (col. 10, lines 23-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the image display element is an LED as taught by Shen in the system of the combination of Abe and Kawamura in order to provide display device with light-emitting efficiency.

7. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T Nguyen whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

Art Unit: 2674

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JNguyen
9/26/2005


REGINA LIANG
PRIMARY EXAMINER